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Some features of horizontally oriented low-current electric arc in air

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Abstract

© 2016, Pleiades Publishing, Ltd.The properties of an electric arc operating in open air at currents of lower than 1 A were studied experimentally. The rod cathode was oriented horizontally. Cylindrical rods and plane plates either installed strictly vertically in front of the cathode end or tilted at a certain angle served as the anode. It is shown that, with such an electrode configuration, it is possible to form a discharge channel much longer than the electrode gap length. Regimes of regular oscillations are revealed, and conditions for their appearance are established. The electric field strength in the arc column and the electron temperature near the anode are calculated.

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